



Transforming Defense



Office of Force Transformation

Information Age

***“The Path Not Taken
...yet”***

Globalization II

Globalization III

Industrial Age

- ***The Role of Defense in National Security***
- ***The Management of Defense***
- ***The Force***

Vision: Broad and Sustained Competitive Advantage

Arthur K. Cebrowski
Director, Force Transformation
17 June 2003



Operation Iraqi Freedom



Office of Force Transformation

...What

we saw

- ***Grand Strategies in Tension***

“...the 21st century and September 11th have, in fact, changed the circumstances in the world significantly.”

- ***Network-Centric Warfare***

Secretary Donald Rumsfeld

Implementation

“...it allowed us to make decisions and execute those decisions faster than any opponent.”

Lt. Gen.

David D. McKiernan

- ***The Power of Transformation***

“...a campaign...unlike anything that we have seen before,”

Gen. Tommy

Franks



Transforming Defense

Office of Force Transformation

**Global
Interests**

**Homeland
Security**

**Surrogat
e Wars**

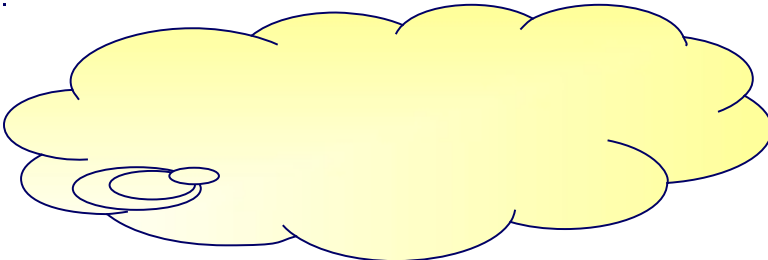
MAD

Containment

=

>

**199
0**



**200
0**

**Global
Interests**

**Homeland
Security**

**System
Perturbations
and
Consequences**

Transaction Strategy?

=

>



The System Perturbation

Office of Information

Pain

Vertical Shock

9/11

Airlines

Financial

Anthr

Afghanistan

War on Terrorism

Israel-PA?

Do

Pakistan

Iraq?

Force

Do

Horizontal Ta

India-P

North

Ho

Horizontal

PG War II

Next Vertical Shock

Time

Da Stans



On 9/11, A Map Redrawn

The Core

Functioning

But if you are not against globalization, then you should join the solution set

Functioning

Functioning

If you are fighting against or losing to globalization, you are likely a problem for the U.S.

Mostly Non-Integrating Ga

Functioning

Functionin

U.S. Military Responses to Situations, 1990-2002

- Evac's
- ✱ Peace/Belief
- ✚ Contingency Positioning
- Show of Force
- ✱ Combat



"The Pentagon's New Map"

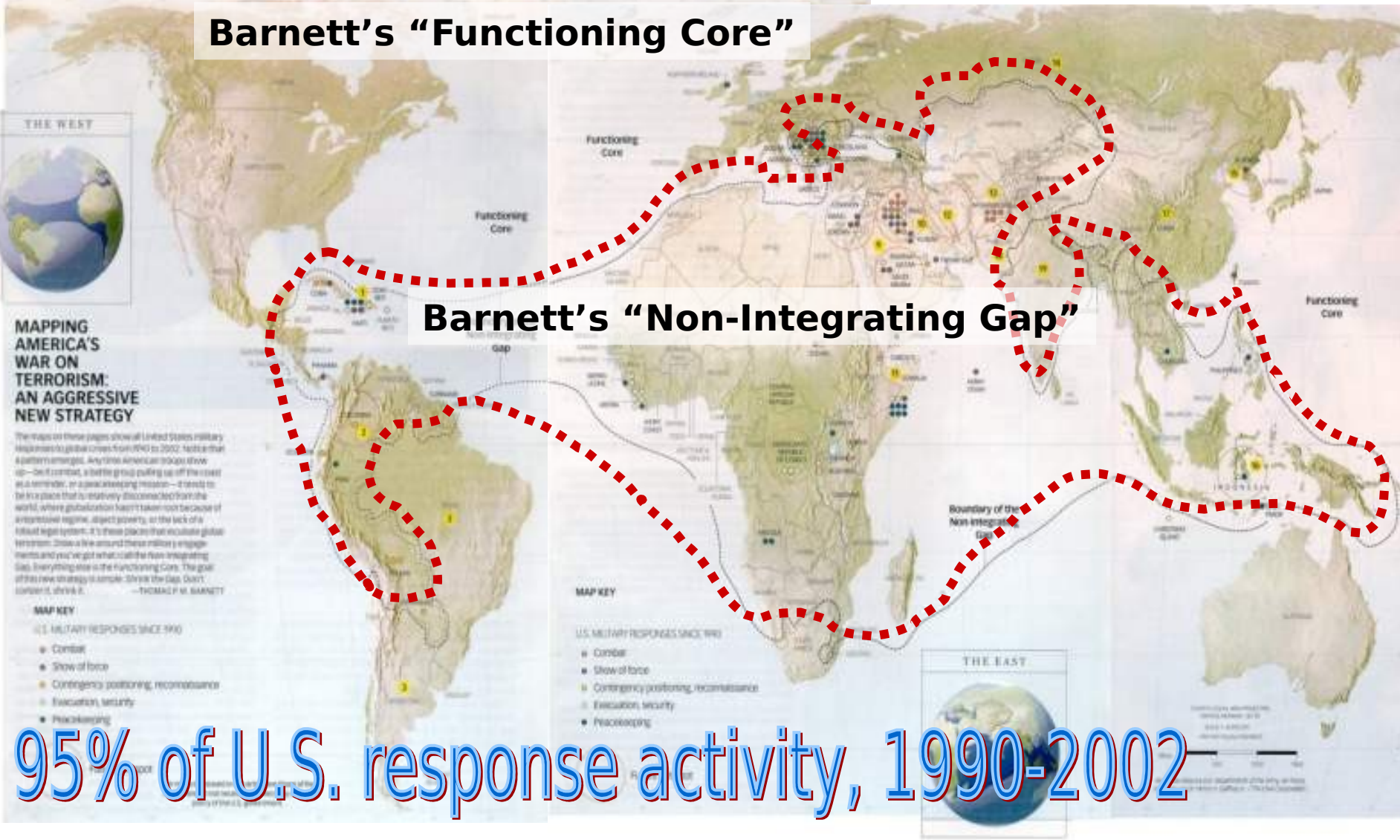


Thomas P.M. Barnett, *Esquire*, March 2003

Office of Force Transformation

Barnett's "Functioning Core"

Barnett's "Non-Integrating Gap"



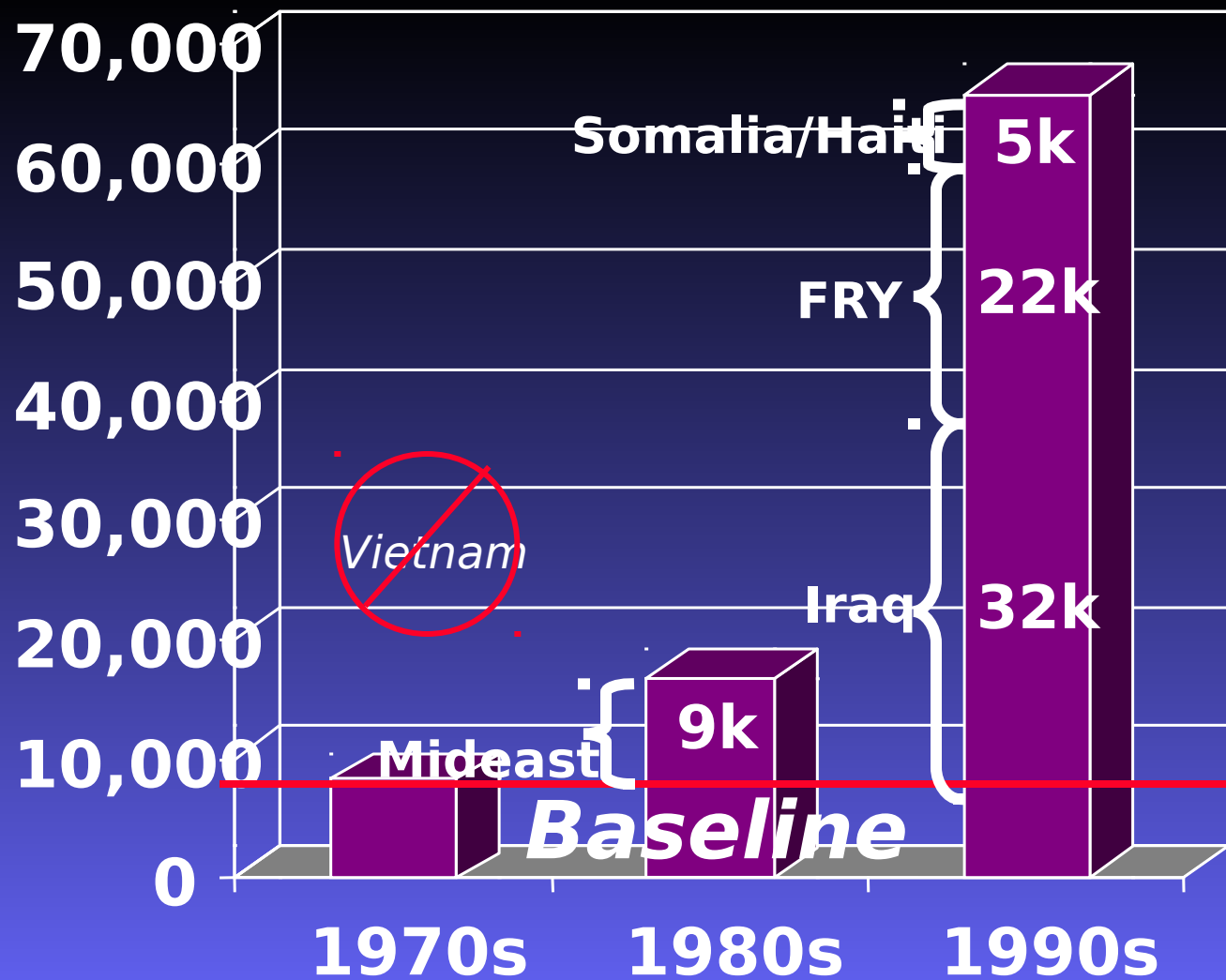
95% of U.S. response activity, 1990-2002



A Booming Export Market



Office of Force Transformation



Combined Service "Crisis" Response Days*

Source: CNA Co

* Total number of response days for all operations by Navy, Marines, Air Force a

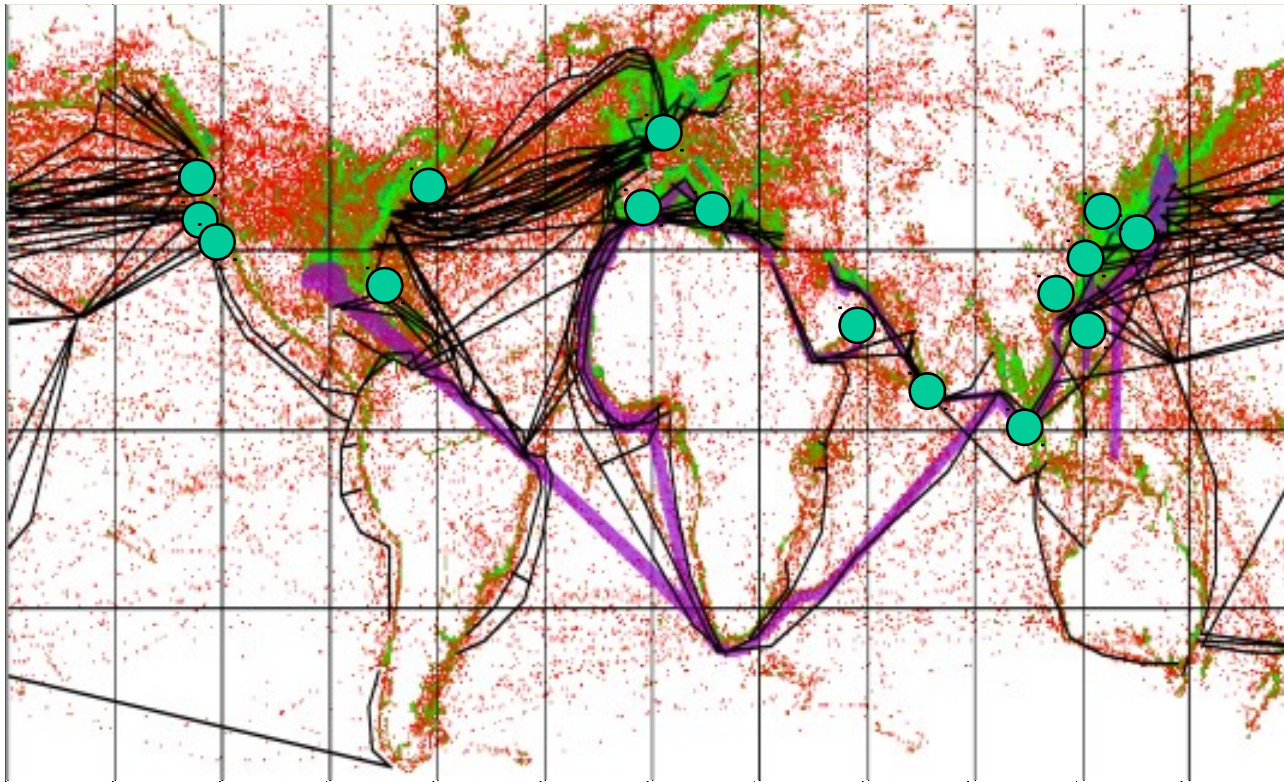


Global Trends

Office of Force Transformation

Globalization II

—→ Globalization III



Industrial Age



Information Age



Global Trends

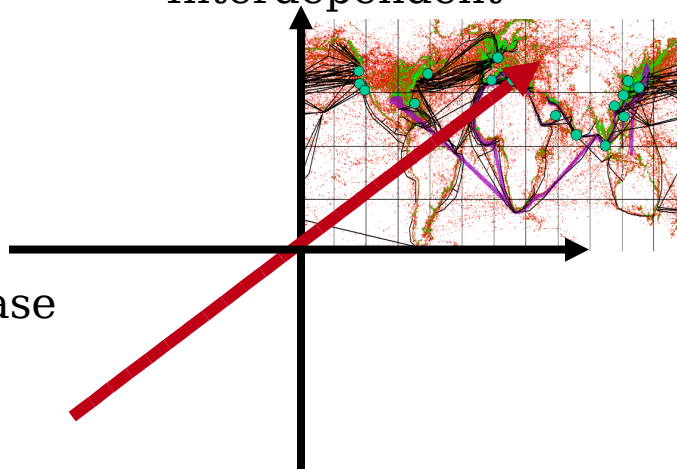
Office of Force Transformation

Information Age

- Short Cycle Time
- New Competencies
- Adaptive Planning
- Integrated Joint
- Interdependent

Globalization II

- Developed Rules
- Mature Markets
- Narrowing Customer Base
- Security=Defense



Globalization III

- Emerging Rules
- Market Opportunities
- New Customer Base Em
- Security=All Else+Defer

Industrial Age

- Long Cycle Time
- Well Developed Tools/Processes
- Deliberate Planning
- Deconflicted Joint
- Tortured Interoperability



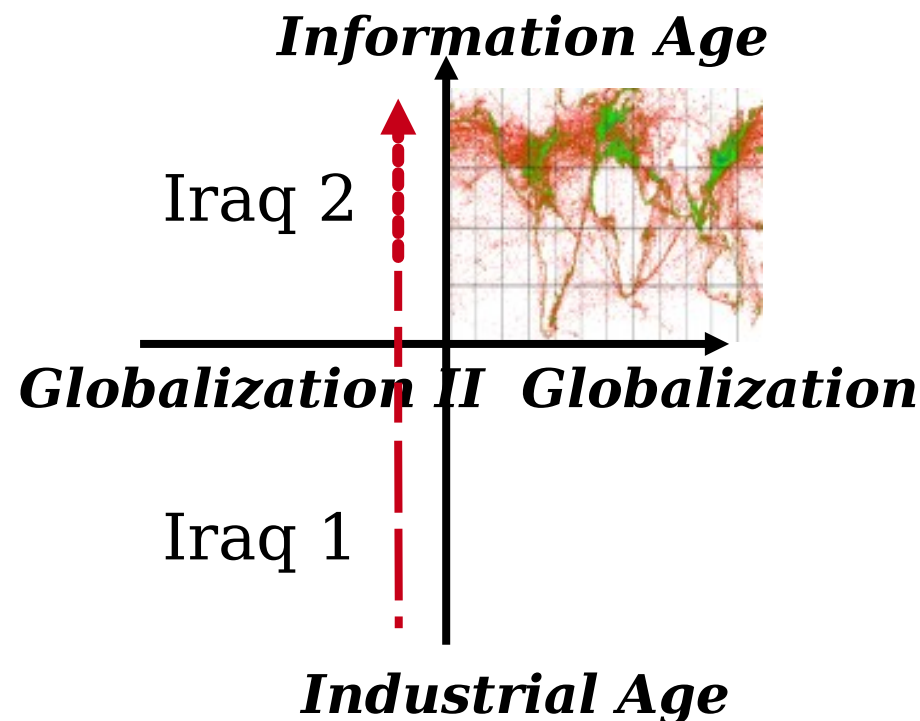
Global Trends



Office of Force Transformation

The Emerging American Military:

- *More expeditionary (including lighter, more lethal)*
- *More networked (more interoperability at the JTF level)*
- *Designed to leverage the exterior positions (precision from distance as sensors move in)*
- *Leverages increasingly persistent ISR*
- *Tighter sensor-shooter timelines (sensing, C2, fly-out)*



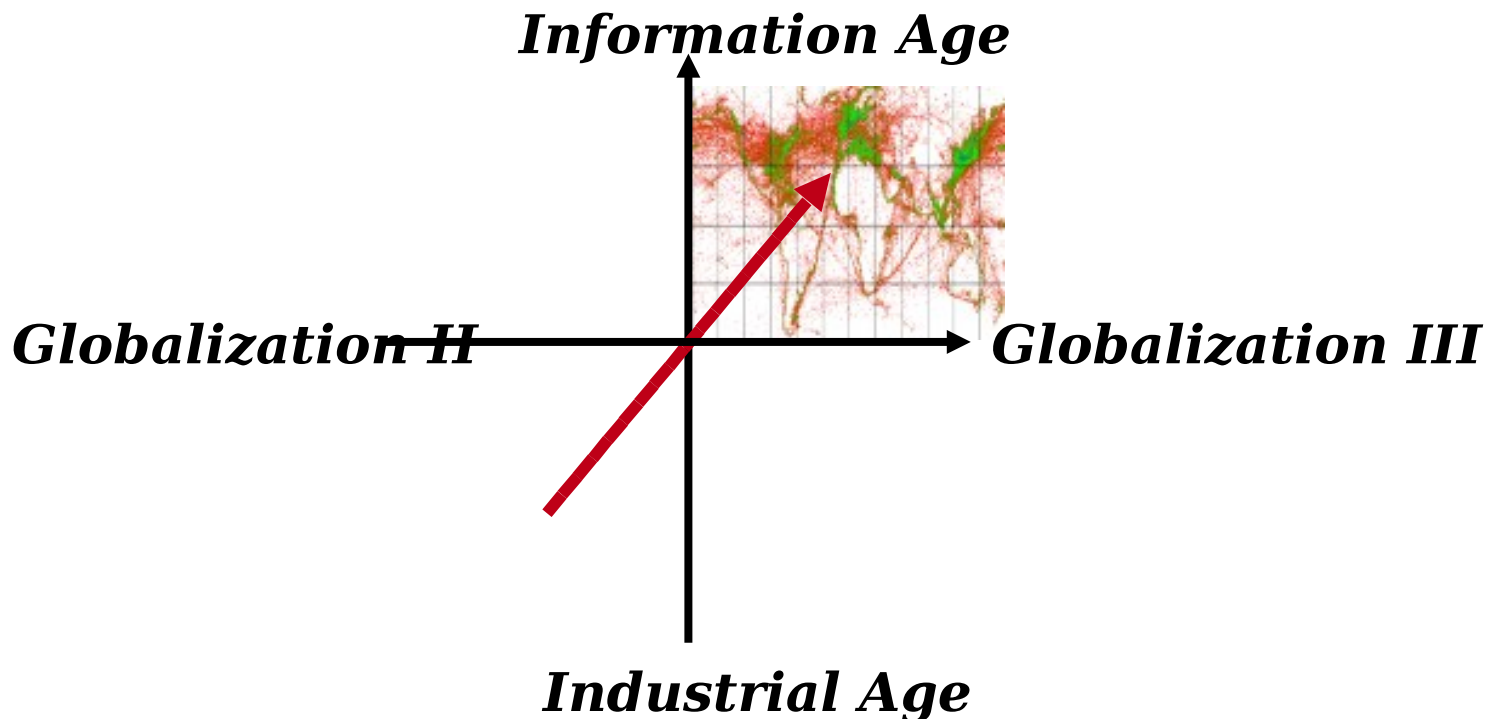


Global Trends... Defense



Office of Force Transformation

- ***More Preventative- Less Punitive***
- ***Achieve unambiguous warning earlier***
- ***More SOF-Like***
- ***A Deter Forward Force***
- ***An Intel/Surveillance-based force***
- ***Countering Weapons of Mass Destruction***





Global Trends... Threats



Office of Force Transformation

- *More Preventative- Less Punitive*
- *Achieve unambiguous warning earlier*
- *More SOF-Like*
- *A Deter Forward Force*
- *An Intel/Surveillance-based force*
- *Countering Weapons of Mass Destruction*

System

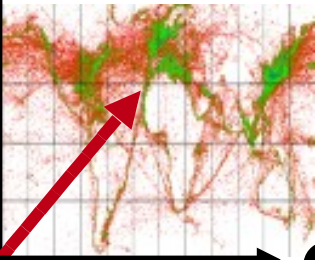
State

Individual

-----[Great Power War?]------

Political Ideology	Hated Dictator	Hated Dictator w/Nukes	Nuclear Nationalists
Narco-terrorists	Regional Terrorists	International Terrorists	SEI w/Bugs

Information Age



Globalization II

Globalization III

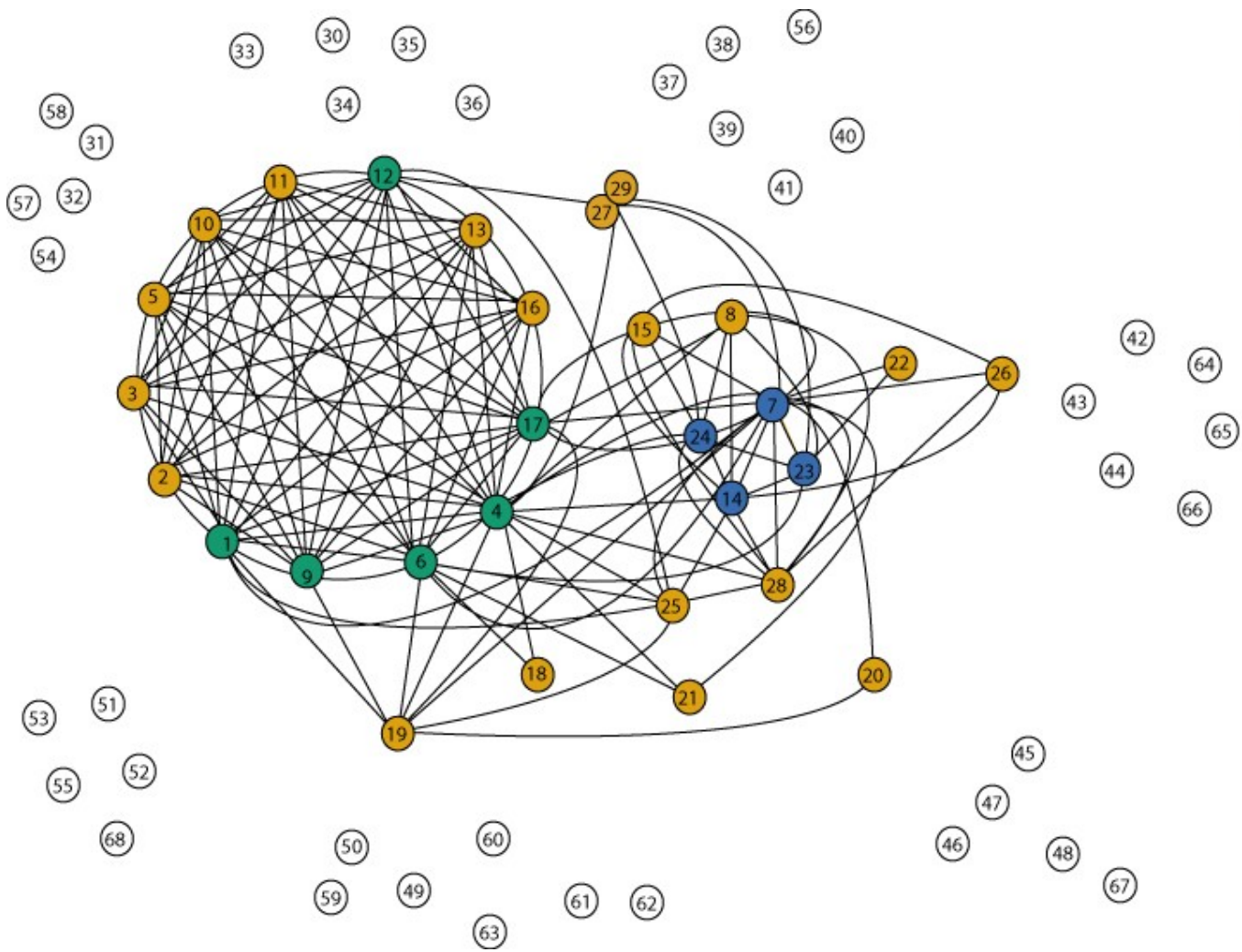
Industrial Age



Militant Groups Network



Office of Force Transformation



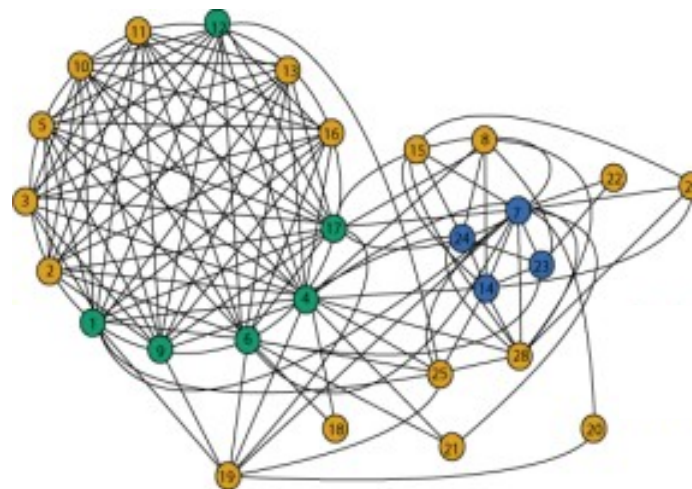
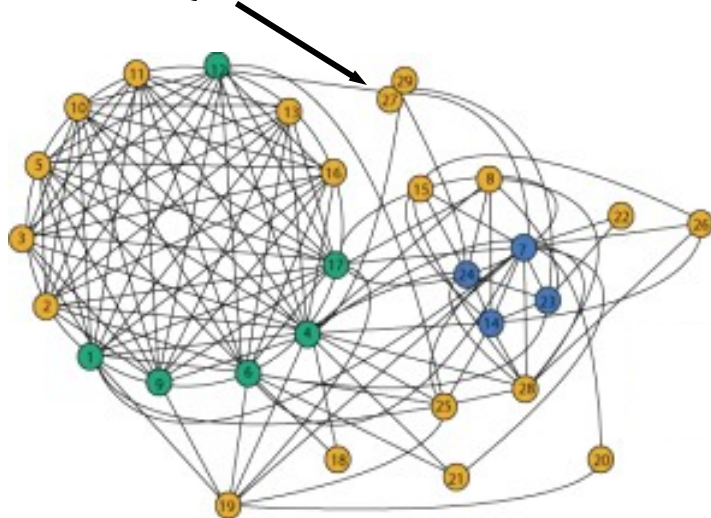


Center of Gravity?



Office of Force Transformation

al-Qaeda





Global Trends... Threats



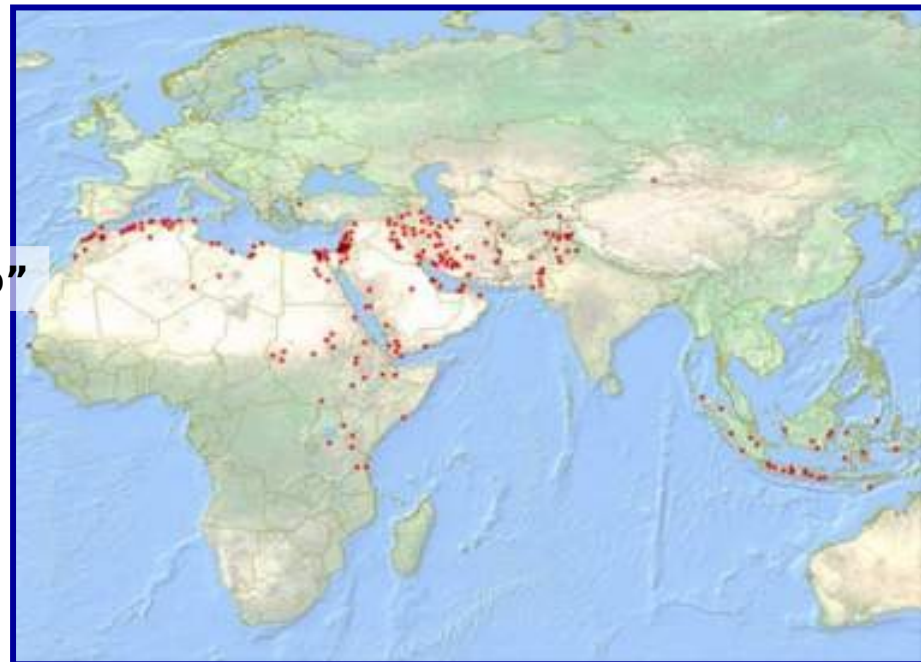
Office of Force Transformation

Disconnectedness Danger →

Militant Technical Centers

Barnett's "Functioning Core"

Barnett's "Non-Integrating Gap"





Military Response to Information Age: Network Centric Warfare



Office of Force Transformation

Translates an Information Advantage into a decisive Warfighting Advantage

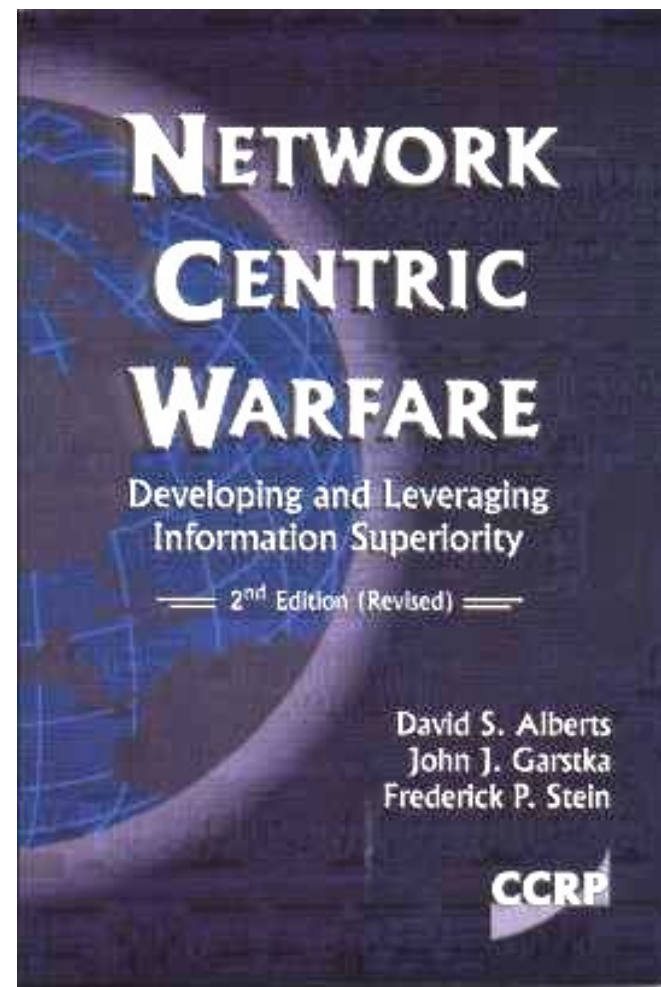
Characterized by:

- Knowledge of commander's intent
- Information sharing and collaboration
- Shared situational awareness

Information Advantage - enabled by the robust networking of well informed geographically dispersed forces

Warfighting Advantage - exploits behavioral change and new doctrine to enable:

- Self-synchronization
- Speed of command
- Rapid Lock-out



Based on Human Behavior



Warfighting Advantage



Office of Force Transformation

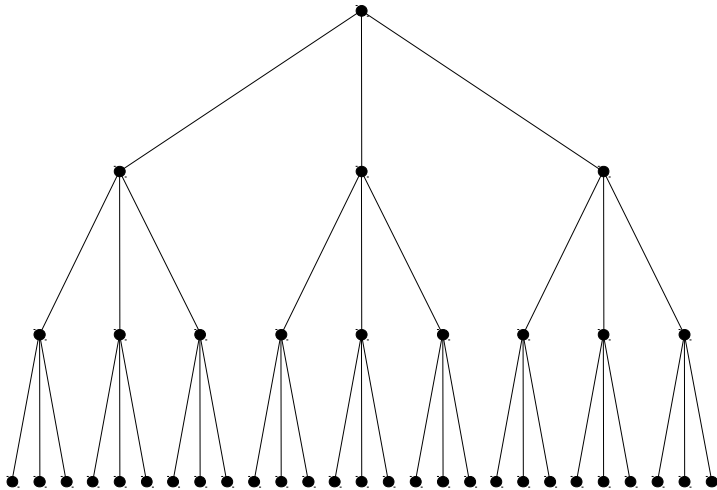
***Networked Forces
Outfight***

***Non-
Networked Forces***



Chains versus Networks

Office of Force Transformation

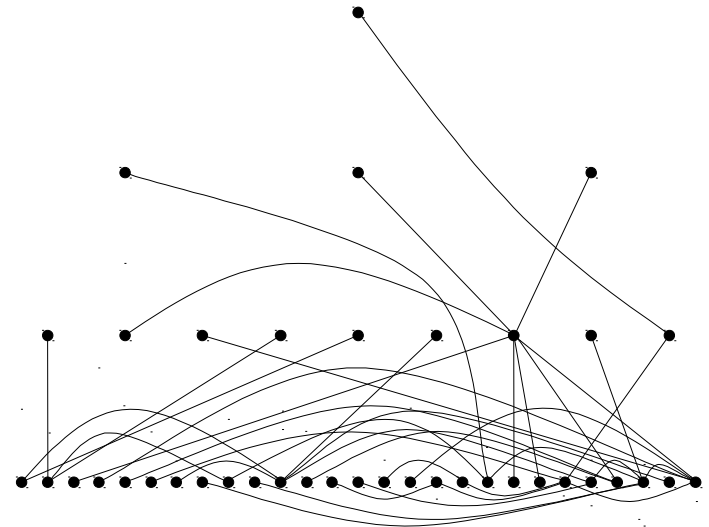


Chain

Too brittle, simple pattern, simple control, scaled

“business end” most poorly connected, hard to reconfigure or

change flow



Network

Very robust, complex pattern, complex control, scale free

“business end” best connected, natural to reconfigure or change

flow



Joint Operations Concepts



Office of Force Transformation

... advances

in the information domain, including ISR, data links & info

Superiority ...

ed

tion

on

nt

→

Informational

Cognitive

NCW

Physical

... enabled

Iraqi Freedom to focus a significant effort on the cognitive domain

domain

ed

Information Age Warfare

Based on Human Behavior

- Informed by Info Age Concepts and Phenomena

- Creating New Dominant Sources of Military Power

- Hence, A New Theory of War

Non-Linear

- Precision

- Maneuver

- Strike Power

- Protection

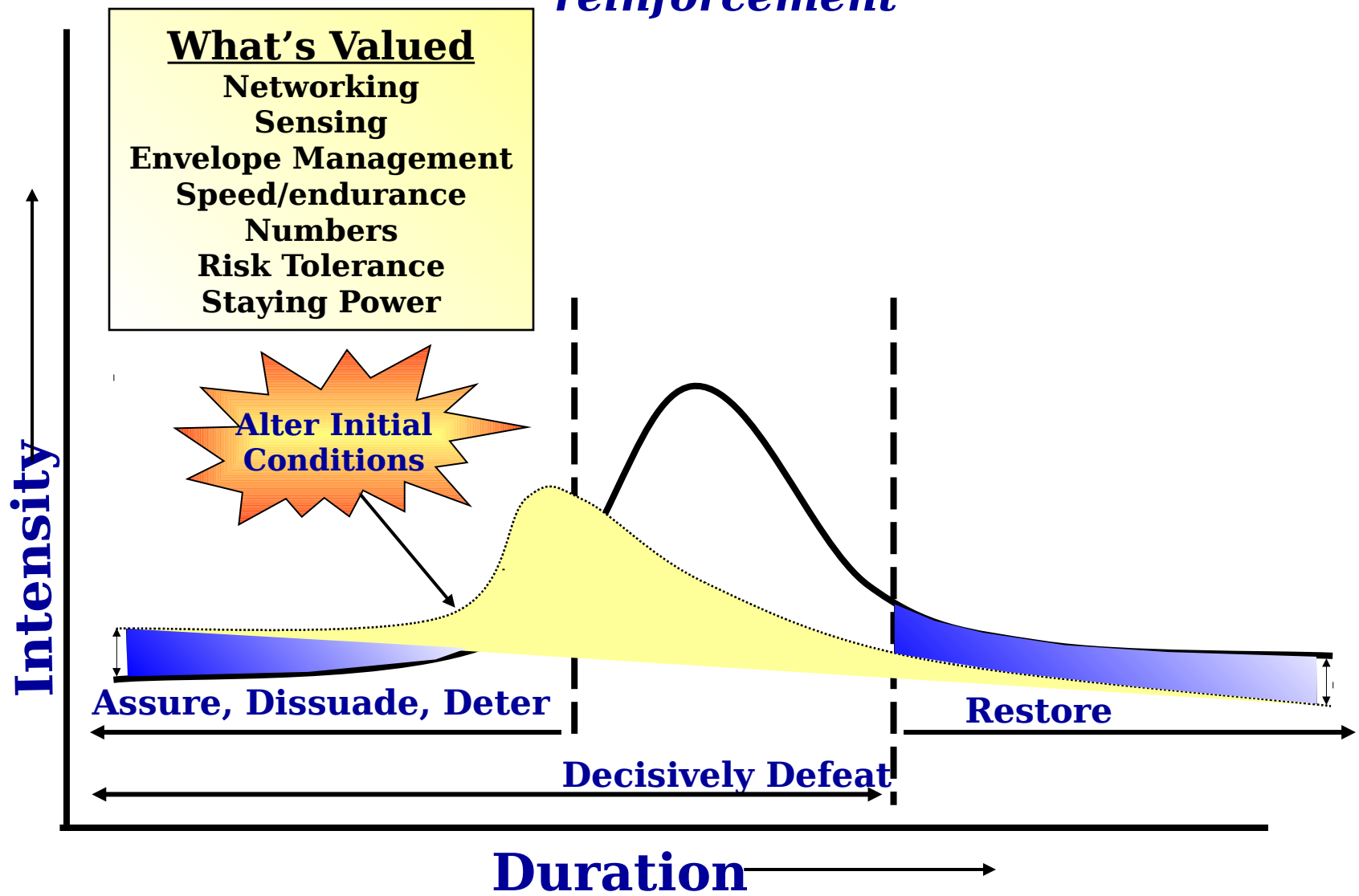
While much of the effort in Desert Storm was focused on the physical domain ...



Transforming Defense

...deter forward ...or defeat with modest reinforcement

Office of Force Transformation





Transforming Defense



Strategic Maneuver/Balance

forces forward
strategic deploy from home
lies

itional Maneuver

from forward garrison
from the sea
from strategic distances

Forward

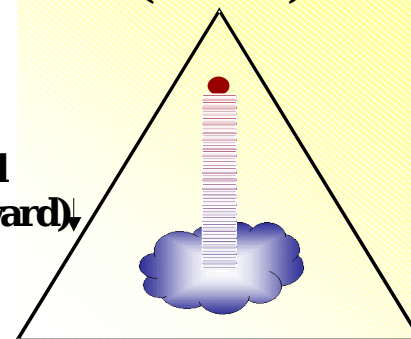
d derivative force
sustaining force
onstabulary/Nation-building force

...Strategic

ISSUES

Forces Forward
(Garrison Forward)↓
(Sea-based)↑
(Hubs)↑

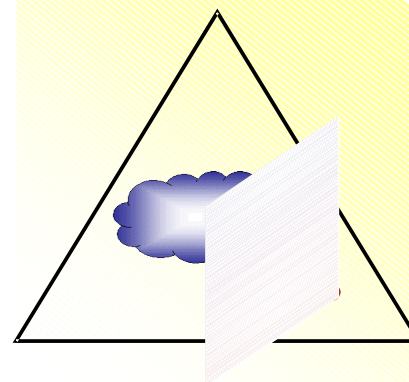
**Strategic Deploy
From Home
(Reactive)**



Alliances

ances

Sea



**Garrison
Forward**



Operational Maneuver



...a

Office of Force Transformation

System

... From the Sea

... From Strategic Dist

*Deter Forward
Assured Access
All Land Forces
Common Lift
Common Sustainment
Systems
Common Networks*

*Defense:
Mobility
Early ISR
Political Ease
Speed
Temporal
Projecting
Defense*

*Defense:
Range
Large Scale
Inevitability
Permanent*

*The Nation's New One-Two
Punch*



The Power of Transformation



Office of Force Transformation

what we saw

- **NCW implementation**
- **The power of shared awareness**

ISR

High speed networking

New capabilities / TTPs

The non-contiguous battlespace

- **Networking + ISR =**
Speed
- **Information running ahead of the physics**

Speed Creates the Appearance of an Incompetent Opponent

ISR + Speed + Lethality => Bad Options for the Enemy

A New "Sweet Spot"

- **A new Airpower - Land power intersection**

All weather weapons /

CAS / Interdiction

Speed

Weight of Fire vs Precision

- **Movement toward tactical level jointness / interoperability**

Especially SOF



...What We Also Saw



Office of Force Transformation





...What We Also Saw



Office of Force Transformation



ADMIRAL, WITH ALL
DUE RESPECT—
COULD WE HAVE LESS
NETWORK-CENTRIC
AND MORE ROUNDS
ON TARGET?!





...and what we didn't see



Office of Force Transformation

- Operational maneuver
 - From strategic distances (*except 173 AB and some Air Force assets*)
 - From the sea (*except 26th MEU*)
- A new concept of lift
- A new concept of vertical maneuver
- A new land warrior system
- A new joint demand centered logistics system
- A new demand centered intelligence system

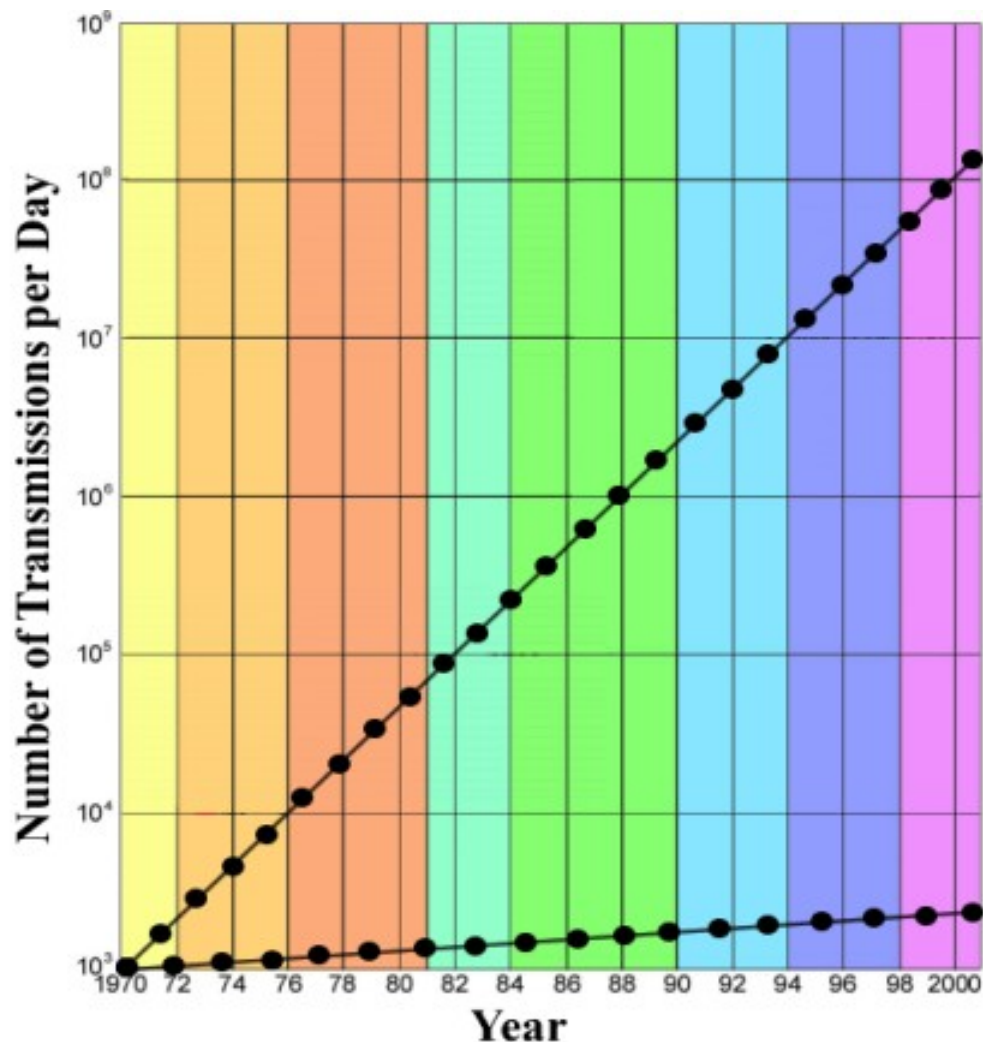


The Problem ... An Explosion of Data



The Impact of Moore's Law

Office of Force Transformation



Collection and Processing
(Exponential Increases)

Issues

- *Collection & Analysis Gaps Results In ...*

- Analytical Problems
- Data sharing Problems
- Dissemination Problems

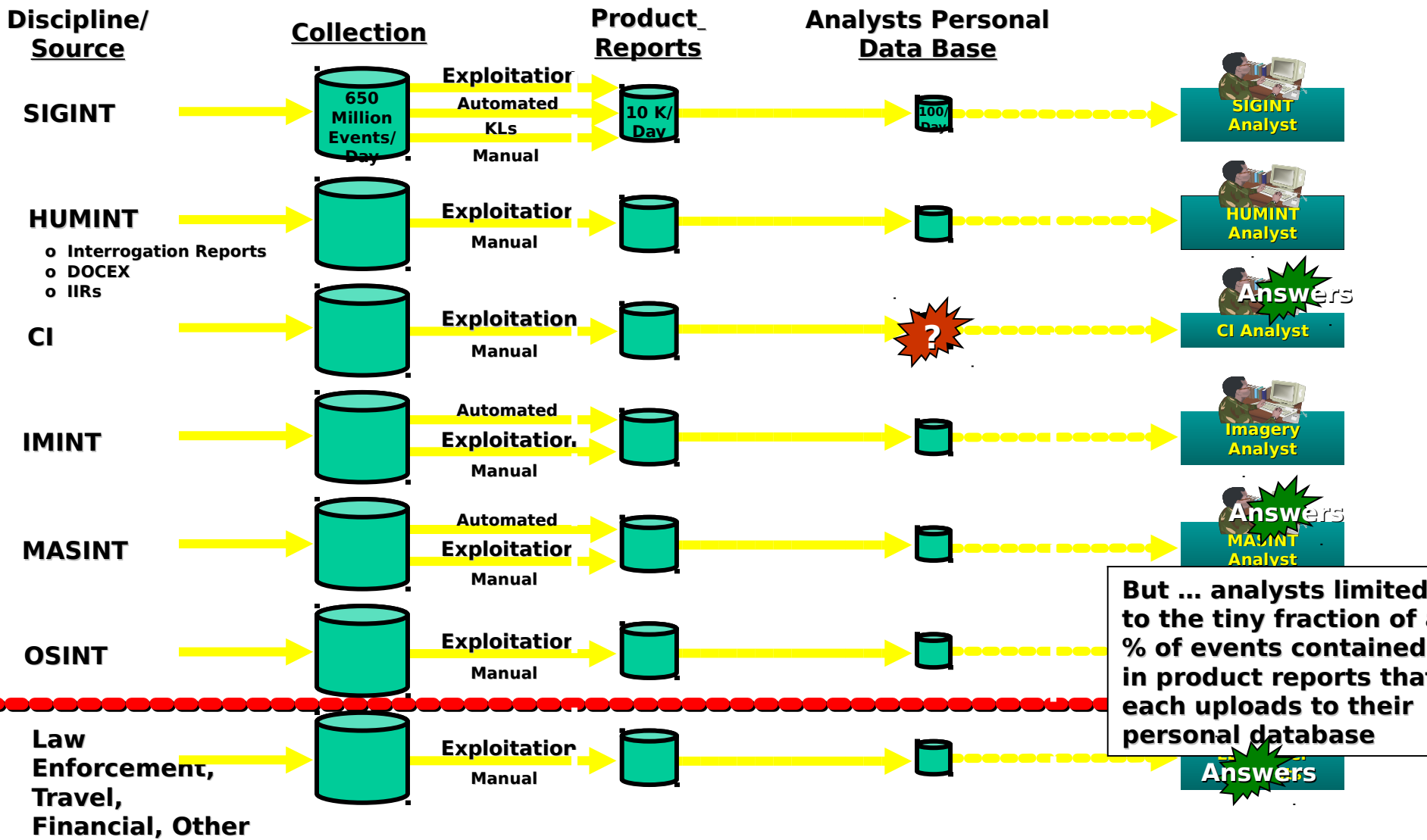
Exploitation and Analysis
(Moderate Slope, Linear Increases)



Intelligence Analysis Problem



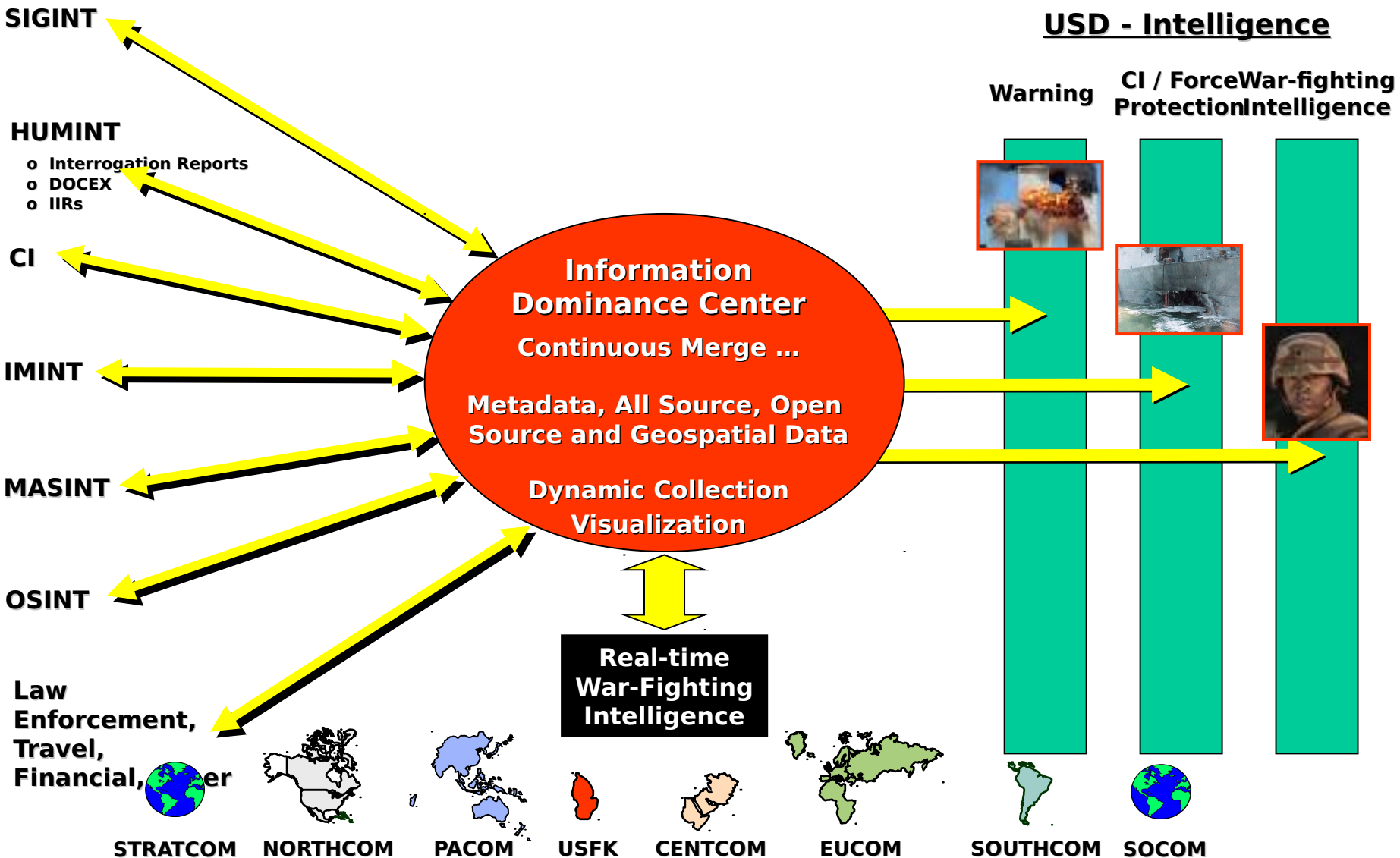
Office of Force Transformation





Process Transformation

Office of Force Transformation





What We Didn't See

...New Lift Concepts



Office of Force Transformation



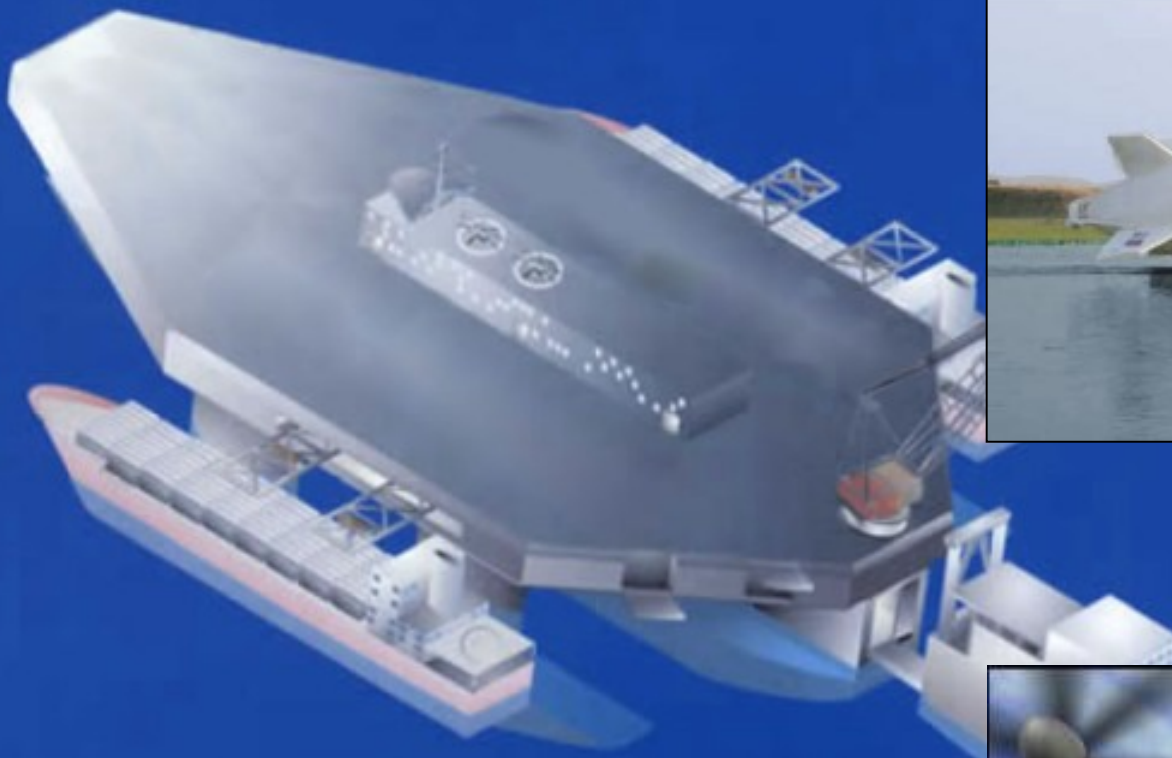


Operational Maneuver



Office of Force Transformation

...From the





Operational Maneuver



Office of Force Transformation

*From the
Sea*





Sea-Based Tactical Air



Office of Force Transformation

Distributed Sea-based TACAIR

Network-centric

- Collaborative planning and execution
- Netted expeditionary sensors

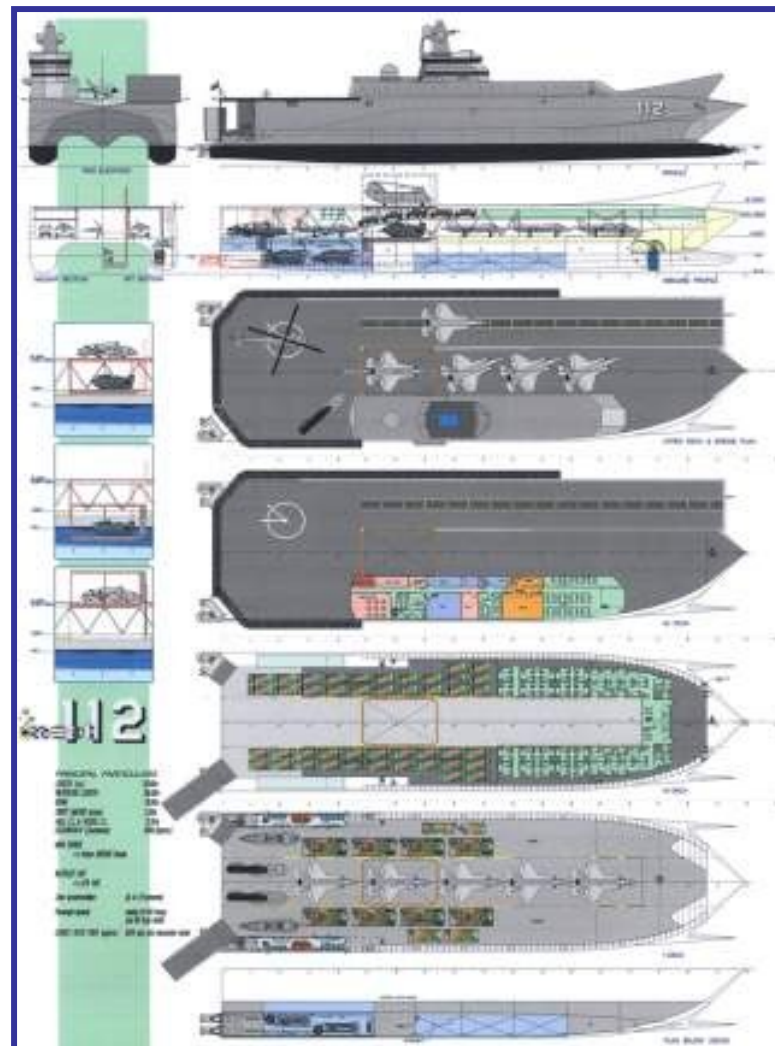
Continuous power vice pulse of power (24 hour ops)

Assured access

- Correct tactical instability
- Complicate enemy ISR
- Improve survivability/susceptibility/vulnerability
- Reduce manpower
- Reduce cost

Sea-basing implementation

- Split operations/replenishment
- AIMD ashore or ship-based



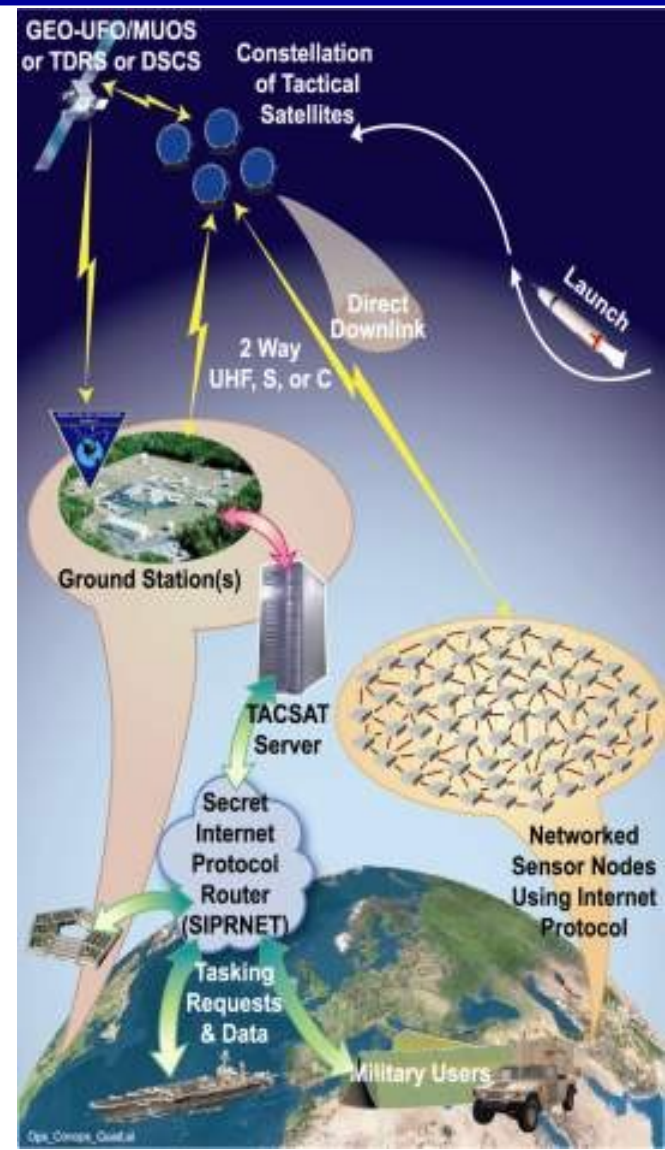


Operationally Responsive Microsat System



Office of Force Transformation

- Produce a responsive and adaptive operationally relevant vehicle for space
 - Develop a near term path for rapidly launching tactical space capabilities
- Experiment with the integration of space and atmospheric vehicles
 - Provide SIPRNET access for shared data/information correlation
- Provide a first-launch micro-satellite which will ...
 - experiment with new space capabilities at low cost
- Broaden DoD capabilities base and exploit new technologies
 - high capacity, microsats that can rapidly deploy tailored payloads





Information-Based Soldier



Office of Force Transformation

Fully integrated Infantry Fighting System

- *Combines Sensors, Computers, Lasers, Geo Location and Radio with Soldier Mission Equipment*
- *Digitized reporting; brings dismounted soldier into digital battlefield/situational awareness*





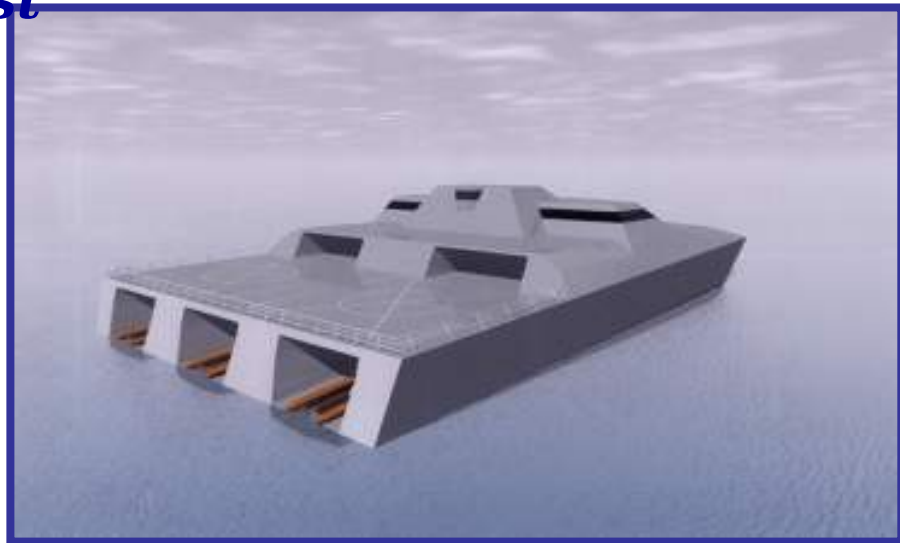
Increased Performance



Office of Force Transformation

...For lower

COST



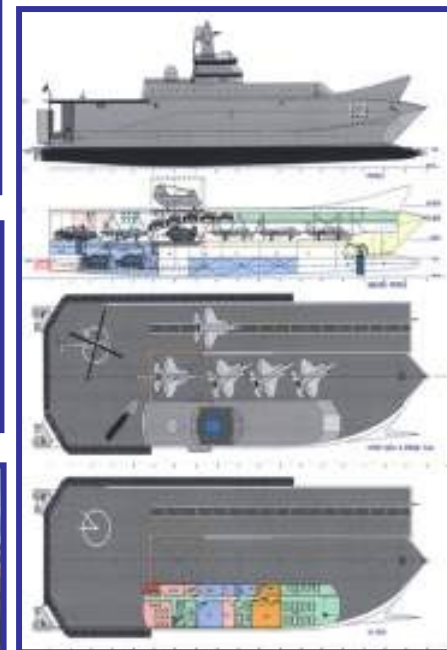
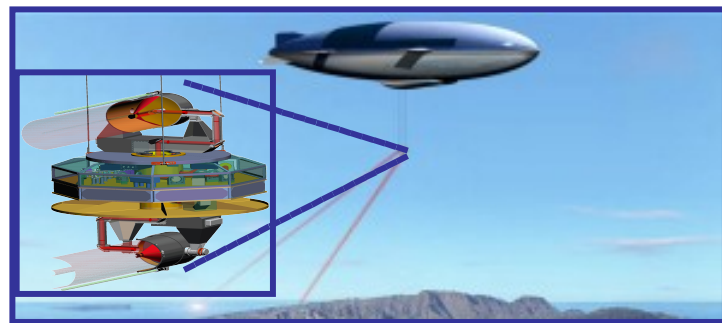
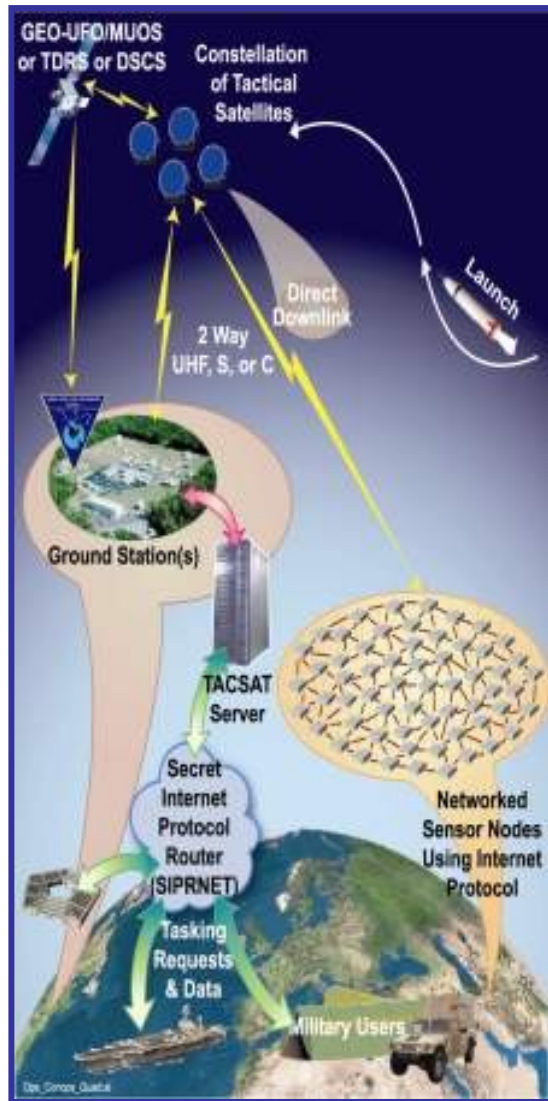


The Path Not Taken

... yet



Office of Force Transformation





Wildcards vs. Character of War



so far

Office of Force Transformation

- **Directed Energy Weapons vs. Conventional Weapons**
- **Low Cost Platforms vs. Payloads**
- **Non-lethals**
 - *RF energy*
 - *Personnel*
- **Sensor-based no man**





Transforming Defense



Office of Force Transformation

Information Age

***“A Future Worth
Creating”***

Globalization II

Globalization III

- ***The Role of Defense in National Security***
- ***The Management of Defense***
- ***The Force***

Vision: Broad and Sustained Competitive Advantage

Industrial Age

Arthur K. Cebrowski
Director, Force Transformation
17 June 2003